3.1.11. SOLAR RADIATION FACILITY (SRF)

Support for the CMDL solar radiation measurement programs at seven field sites continued during 1993. Sensor procurement, maintenance, and repairs were part of the ongoing activities of the SRF in addition to providing calibrations and characterization information. The seven sites include the four CMDL baseline observatories plus KWJ, BRM, and BAO. Also, a suite of continuous broadband measurements was maintained at the SRF facility in Boulder as part of a historical record dating back to 1977. Instrument characterization methodologies were investigated as part of the ongoing activity of the SRF.

The SRF supported and participated in an intercomparison of automated cavity radiometer systems held at the National Renewable Energy Laboratory (NREL) September 27-October 4, 1993. Four cavity radiometers and other CMDL equipment contributed to the success of the comparison. Post-comparison data analyses and data entry tasks were also performed by CMDL personnel in support of the event. An ongoing collaboration with NREL involving cavity comparisons is part of the SRF means of maintaining the integrity of the calibrations used by CMDL monitoring activities at its sites.

A project was started during 1993 by the SRF as a result of a proposal to the WMO for implementing broadband solar radiation measurements at GEF/GAW sites. Each site will be equipped with pyranometers, pyrheliometers, automated solar trackers, shadowband systems for diffuse-sky radiation measurements, and an automated absolute cavity system for use as a primary calibration standard. Data acquisition systems identical to those used at the CMDL baseline observatories will be constructed and used at the GEF/GAW sites as well. The instruments, data acquisition components, computers, and cavity radiometer systems destined for each GEF/GAW site will be assembled and put into operation at the SRF in Boulder. Each country will send its representative to Boulder for training in the collection of solar data and calibration techniques using the equipment that will ultimately be shipped to each respective country. The procurement of equipment began in late 1993, and the first trainee is expected during the second quarter of 1994.